

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) A safety device for a battery of electrical storage cells composed of a plurality of modules connected in series each including a storage cell or a group of storage cells and in particular a group of storage cells connected in parallel at least one storage cell, said device including:

-at least one individual circuit for individually short circuiting a module if ~~it~~ said module should fail and maintaining permanently ~~the~~ electrical continuity between the other of said modules connected in series with ~~it~~ said module ~~in said battery~~,

wherein said at least one individual circuit includes:

-a first shunt circuit that is connected to ~~the~~ two end terminals of a said module, ~~in said battery~~ and wherein said first shunt circuit includes:

~~includes~~ an electrical energy consuming member in series with a switching member for applying a shunt to the terminals of said module via said consuming member if the voltage at the terminals of said module is greater than a particular upper voltage threshold value, said at least one individual circuit directly short circuiting the terminals of said module if the voltage at said terminals of said module falls below a particular lower voltage threshold value.

2. (CURRENTLY AMENDED) The device claimed in claim 1, wherein said at least one individual circuit short circuits internally the module to whose terminals it is connected via ~~a~~the first shunt circuit by extending the discharging of said module via said first shunt circuit until a reversal of polarity which corresponds to a negative threshold of the voltage at the terminals of the module occurs immediately discharging of the battery commences.

3. (CURRENTLY AMENDED) The device claimed in claim 1, wherein a second shunt circuit is connected to the two end terminals of ~~a~~the module of the battery in parallel with the first shunt circuit associated with said module and includes a switching member for short circuiting the terminals of the module directly if the voltage at the terminals of the module is below a particular lower voltage threshold value.

4. (CURRENTLY AMENDED) The device claimed in claim 1, wherein one of said at least one individual circuits is provided for each ~~battery~~ module.

5. (CURRENTLY AMENDED) The device claimed in claim 1, wherein said electrical energy consuming member of ~~an~~said at least one individual circuit is an energy dissipating resistor.

6. (CURRENTLY AMENDED) The device claimed in claim 3, wherein each individual circuit includes at least one trigger device which is responsive to the voltage present at said terminals of said module with which said each individual circuit is associated, for at least one of said first and

second shunt circuits of said individual circuit, and which controls switching of said switching member of said individual circuit to a conducting state from a predetermined voltage threshold value.

7. (CURRENTLY AMENDED) The device claimed in claim 1, wherein said at least one switching member of ~~a~~ said first shunt circuit of ~~an~~ said at least one individual circuit is controlled by an external programmed control unit in accordance with the voltage at said terminals of said module.

8. (CURRENTLY AMENDED) The device claimed in claim 1, wherein said switching member of said first shunt circuit ~~of an individual circuit provided for a module~~ is switched on if ~~the~~ a voltage measured for ~~an~~ said at least one individual circuit at said terminals of ~~a~~ said module exceeds said particular upper voltage threshold value, and said switching member of said second shunt circuit of said individual circuit is turned on immediately if said measured voltage falls below said particular lower voltage threshold value.

9. (CURRENTLY AMENDED) A battery of electrical storage cells made up of a plurality of modules connected in series and each including ~~a~~ at least one storage cell ~~or a group of storage cells and in particular a group of storage cells connected in parallel~~, said battery including:

a safety device including at least one individual circuit for individually short circuiting a module if ~~it~~ said module should fail and maintaining permanently ~~the~~ electrical continuity between the other of said modules connected in series with ~~it~~ said module ~~in said battery~~, wherein said at least one individual circuit includes:

a first shunt circuit that is connected to ~~the~~ two end terminals of ~~a~~ said module, ~~in said battery~~ and wherein said first shunt circuit includes:

~~includes an~~ electrical energy consuming member in series with a switching member for applying a shunt to the terminals of said module via said consuming member if the voltage at the terminals of said module is greater than a particular upper voltage threshold value, said at least one individual circuit directly short circuiting the terminals of said module if the voltage at said terminals of said module falls below a particular lower voltage threshold value.

10. (CURRENTLY AMENDED) The device claimed in claim 9, wherein said at least one individual circuit short circuits internally the module to whose terminals it is connected via ~~a~~ the first shunt circuit by extending the discharging of said module via said first shunt circuit until a reversal of polarity which corresponds to a negative threshold of the voltage at the terminals of the module occurs immediately discharging of the battery commences.

11. (CURRENTLY AMENDED) The device claimed in claim 9, wherein a second shunt circuit is connected to the two end terminals of ~~a~~ the module of the battery in parallel with the first shunt

circuit associated with said module and includes a switching member for short circuiting the terminals of the module directly if the voltage at the terminals of the module is below a particular lower voltage threshold value.

12. (CURRENTLY AMENDED) The device claimed in claim 9, wherein one of said at least one individual circuits is provided for each ~~battery~~-module.

13. (CURRENTLY AMENDED) The device claimed in claim 9, wherein said electrical energy consuming member of ~~a~~said at least one individual circuit is an energy dissipating resistor.

14. (CURRENTLY AMENDED) The device claimed in claim 11, wherein each individual circuit includes at least one trigger device which is responsive to the voltage present at said terminals of said module with which said each individual circuit is associated, for at least one of said first and second shunt circuits of said individual circuit, and which controls switching of said switching member of said individual circuit to a conducting state from a predetermined voltage threshold value.

15. (CURRENTLY AMENDED) The device claimed in claim 9, wherein ~~at least one~~said switching member of ~~a~~said first shunt circuit of ~~a~~said at least one individual circuit is controlled by an external programmed control unit in accordance with the voltage at said terminals of said module.

16. (CURRENTLY AMENDED) The device claimed in claim 9, wherein said switching member of said first shunt circuit of ~~an individual circuit provided for a module~~ is switched on if ~~the a~~ voltage measured for ~~an~~ said at least one individual circuit at said terminals of ~~a~~ said module exceeds said particular upper voltage threshold value, and said switching member of said second shunt circuit of said individual circuit is turned on immediately if said measured voltage falls below said particular lower voltage threshold value.

17. (NEW) A safety device for a battery of electrical storage cells composed of a plurality of modules connected in series each including a plurality of storage cells connected in parallel, said device including:

at least one individual circuit for individually short circuiting a module if said module should fail and maintaining permanently electrical continuity between the other of said modules connected in series with said module,

wherein said at least one individual circuit includes:

a first shunt circuit that is connected to two end terminals of said module, and

wherein said first shunt circuit includes:

an electrical energy consuming member in series with a switching member for applying a shunt to the terminals of said module via said consuming member if the voltage at the terminals of said module is greater than a particular upper voltage threshold value, said first shunt circuit directly short circuiting the terminals of said module if the

voltage at said terminals of said module falls below a particular lower voltage threshold value.

18. (NEW) A battery of electrical storage cells made up of a plurality of modules connected in series and each including a plurality of storage cells connected in parallel, said battery including:

a safety device including at least one individual circuit for individually short circuiting a module if said module should fail and maintaining permanently electrical continuity between the other of said modules connected in series with said module,

wherein said at least one individual circuit includes:

a first shunt circuit that is connected to two end terminals of said module, and

wherein said first shunt circuit includes:

an electrical energy consuming member in series with a switching member for applying a shunt to the terminals of said module via said consuming member if the voltage at the terminals of said module is greater than a particular upper voltage threshold value, said first shunt circuit directly short circuiting the terminals of said module if the voltage at said terminals of said module falls below a particular lower voltage threshold value.